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SNOWFALL REPORTING DEVICE

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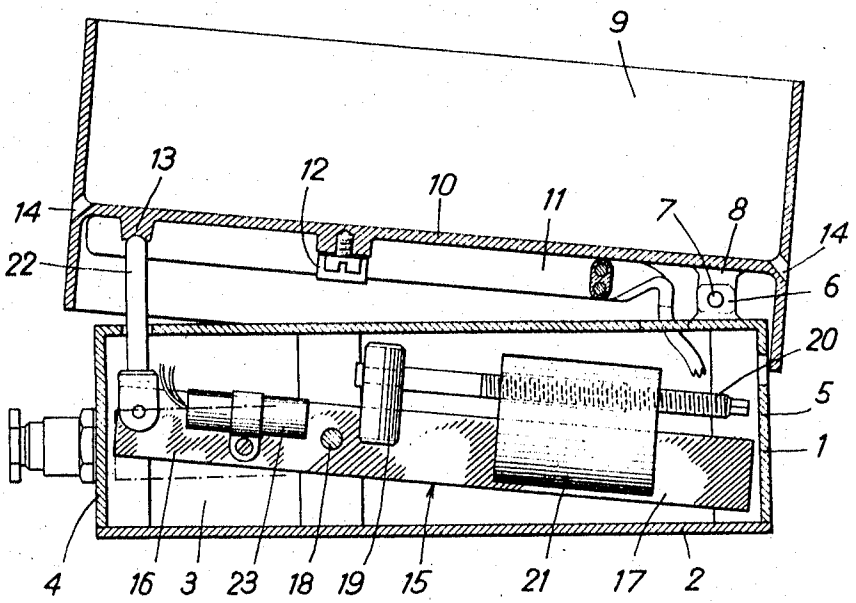


FIG. 1

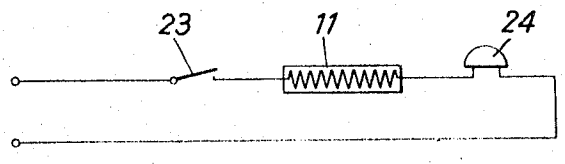


FIG. 2

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SNOWFALL REPORTING DEVICE

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ABSTRACT OF THE DISCLOSURE

A snowfall reporting device having a pivotally mounted snowtrap supported by a movable balance means. A heating means is carried by the snawtrap and a switch means is carried by the balance means so that when the weight of accumulated snow in the snowtrap exceeds the setting of the balance means, the balance means is moved to actuate the switch means which, in turn, energizes the heating means to melt the accumulated snow in the snowtrap.

The present invention relates to snowfall reporting devices and more particularly it relates to a snowfall reporting device including a snowtrap that is heatable by a heating device.

Various types of snowfall meters or reporting devices have been proposed in the prior art, and most of these prior art devices are of the type where the snow is melted in a trap and the snow water subsequently is fed to a measuring vessel. These prior art devices had to be provided not only with a heating device in a trap for melting the snow but also with a heating device in the meter itself to prevent the snow water from freezing in the latter at low outside temperatures. The provision of two different vessels, i.e., a trap and a measuring vessel, as well as of the heating devices for each of these vessels naturally led to oversized and somewhat complicated constructions.

It has also been proposed in the prior art to use snow water in a heated trap for the purpose of completing an electric circuit. The units of this latter type, however, did not always operate reliably, and additionally, they only indicated the snowfall per se but not the extent thereof.

It is the object of the present invention to overcome the difficulties and shortcomings encountered with the prior art forms of snowfall meters and to provide instead, a new and improved snowfall meter.

Another object of the present invention is to provide a snowfall meter of the type which can readily ascertain the extent of a snowfall, but which is constructed in a simple and efficient manner.

Another object of the present invention is to provide a snowfall meter which is of reduced size, yet which operates efficiently and reliably.

Other objects, advantages and salient features of the present invention will become apparent from the following detailed description, which, taken in conjunction with the annexed drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

FIGURE 1 is a sectional view of a snowfall reporting device in accordance with the present invention; and,

FIGURE 2 is a schematic view of an electrical circuit used in the snowfall reporting device.

The snowfall reporting device shown comprises a rigid boxlike frame or casing **1** suitable for being set up outdoors and of rectangular cross-section, having a floor **2**, two longitudinal side walls **3** (of which only one is visible in the drawing), two end-walls **4** and a top wall **5**. At one end of the frame or casing, an upstanding pivot mount **6** is projecting above the top wall. A pivot pin **7**

connects the pivot mount **6** with depending bearing lugs **8** fixed to a snowtrap **9**. The snowtrap **9** is formed as a container having an open-topped chamber and a bottom wall **10**. The lugs **8** depend from the bottom wall **10** towards one edge thereof so that the container or snowtrap **9** substantially forms a one-arm lever pivotal about the pin **7**.

A heating element **11** is secured beneath the container bottom **10** by means of a clip **12**. On that end of container bottom **10** which is remote from bearing lug **8**, there is provided a depending support **13**, while immediately above bottom **10** at least one opening **14** is provided to form a spout to permit the melted snow to drain from the snowtrap or container **9**.

In frame **1**, there is provided a movable balance means in the form of a steelyard **15** with two arms **16** and **17** extending on opposite sides of a pivot **18**. A weight **21** is movably mounted on the arm **17** by means of a spindle **20** which is secured in a block **19**. The end of arm **16** carries an upwardly extending projection or finger **22** whose end bears upon the support **13** to hold and balance the snowtrap **9**. A mercury switch **23** which is series-connected to the heating element **11** and to a monitor unit comprising, for example, a bell **24** and/or a control lamp is carried by the arm **16**.

It would also be feasible to additionally provide a counter device which either is actuated mechanically by the container **9** or which is included in the circuit of the heating element. In use, the snowfall reporting device is set by displacing the weight **21** along arm **17** to that snow-weight which is critical for actuating the monitor unit **24**. The snow is accumulated in container **9** which, as aforementioned, is supported on the finger **22** so that, when the snow-weight defined by said displacement of weight **21** is attained, the arms **16**, **17** are tilted about pivot **18**. This pivoting of the balance or steelyard **15** actuates the switch **23** which, in turn, renders the heating element **11** conductive, and actuates the monitor unit. In this tilted position, shown in FIGURE 1 by phantom lines, the trap **9** is heated so that the snow melts and the snow-water may flow out from the trap **9** through the spout **14**. As soon as the trap **9** has been emptied in this manner, it will be pivoted back to its initial position under the influence of the weight **21**, whereupon the heating element is switched off again through the switch **23** and the circuit also for the monitor unit **24** is interrupted. All the parts have now reached their initial position again so that the processes described may begin anew.

When providing and using a counter, of any well-known type, the number of discharges of trap **9** also may be registered.

It can thus be seen that the present invention provides, by very simple means, a sturdy snowfall meter that is protected against becoming ice-locked.

After reading the foregoing detailed description, it will be seen that the objects set forth at the outset hereof have been successfully achieved by the present invention.

Accordingly, what is claimed is:

1. A snowfall reporting device comprising a pivotally mounted snowtrap means, a movable balance means supporting a portion of said snowtrap means, a switch means operatively coupled with said balance means, a heating means operatively connected to said snowtrap means, and operably connected with said switch means whereby, when a sufficient quantity of snow collects in said snowtrap means, the weight of such snow will move said balance means to operate said switch means and, in turn, operate said heating means to melt said snow in said snowtrap means, said snowtrap means having opening means therein to form a spout means to permit discharging of the melted snow.

2. A snowfall reporting device as defined in claim **1**

wherein said snowtrap means includes a bottom wall means and upstanding side wall means which together define an open-topped snow receiving chamber, said heating means being connected beneath said bottom wall means.

3. A snowfall reporting device as defined in claim 1 wherein said balance means is a pivotally mounted weighing lever having one arm portion carrying a weight and having the other arm portion carrying a projection which supports said snowtrap means.

4. A snowfall reporting device as defined in claim 3 wherein said snowtrap means is pivotally mounted adjacent one end thereof and is supported by said projection adjacent the opposite end thereof.

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